REMARKS

FORMAL REJECTION

Claim 187 is rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

Claim 187 provides: The method according to claim 183, wherein said output comprises a displayed list of hypertext entries representing available media, further comprising the step of receiving a selection of one of the hypertext entries.

The present application claims benefit of priority from 07/812,805 (12/23/91), now US 5,903,454. In order to avoid issues of effective date of disclosure, the support alleged by applicant will reference that document, without prejudice or disclaimer. It is noted that the various other texts are generally a superset of the earlier disclosure, and may provide additional support for the claim language; however, by focusing on the earlier disclosure, possible prior art issues are also addressed.

Relevant disclosure from applicants' '454 patent (complete paragraphs excerpted) is as follows:

> The "help" function is available for when the subject does not know what to do. The "help" screen(s) preferably explains the functions of each of the available buttons or functions, but may also be limited to those that are ambiguous. The "help" screen may also be used to indicate a current status of the interface and the controller. Further, the "help" function may also provide access to various other functions, such as advanced options and configurations, and thus need not be limited to merely providing information on the display. The help system may incorporate a **hypertext-type** system, wherein text or information relating to concepts that are **conceptually linked may be easily accessed from one another**, and in a logical sequence. To eliminate the possibility of the user trying to make **selections** on merely informative help screens, the cursor, in these cases, should be locked to a choice which returns the user to where they left off in the **programming** sequence, and this choice should be highlighted. The "help" function may also comprise "balloon help" similar to the system adopted by Apple Computer, Inc. in Macintosh Operating System 7.0 and later versions.

The present embodiment was constructed and tested using **HyperPAD**.TM., a rapid prototyping package for an IBM-PC Compatible Computer. It is, of course obvious that the present embodiment could be incorporated in a commercial VCR machine by those skilled in the art, or be implemented on many types of general purpose computers with output screens which allow on-screen feedback for the programming operation. Further, the present embodiment can control an infrared remote controlled VCR or translate the programming information and program an infrared remote control through an interface to an infrared transmitter.

The smart screens may be implemented as follows. The controller may be, for example, a Macintosh ci computer, operating under Macintosh 7.0 operating system. The **Hypercard** 2.0 software may be used to implement the screen interface, which incorporates the above-described features, which is generally compatible with the Hyperpad software described above. HyperCard is mentioned due to its capabilities to reference external programs, thus allowing interfacing to various software and hardware devices. A more global scripting language, such as Frontier by UserLand Software Inc., may also be used, especially where low level hardware control of interfaced devices, such as a VCR, multimedia adapter, or the like is desired. Other scripting languages include versions of REXX, by IBM, available on many platforms. The input device is an Apple ADB mouse, and the output display is an 8 bit or 24 bit graphics color adapter connected to, e.g., a 14" color monitor. In addition, various parameters concerning the use of the interface are stored in the computer's memory, and a non-volatile mass storage device, such as a hard disk drive, or EEPROM or EPROM, as well as battery backed RAM could also be used.

The predicted operation is based on: the identity of the user, if more than one user operates the interface and machine, the information already entered into the interface during the present programming session, the presently available choices for data entry, settings for the use of the machine, which may be present as a result of a "setup" operation, settings saved during a prior session, and a database of **programming choices**. In the case of a HyperCard script, the interface software calls another program which has access to the necessary data in the memory, as well as access to any remote database which may be necessary for the function. Using a predictive technology, such as Boolean logic, fuzzy logic, neural network logic, or other type of artificial intelligence, **a most probable choice may be presented to the user for his approval, or another alternative choice may be selected. Further, a number of most probable choices may be presented simultaneously or in sequence**, in order to improve the probability that the user will be immediately or quickly presented with an acceptable choice. If multiple choices are presented, and there is limited room on the display, two (or more) similar choices may be merged into a single **menu selection**, which may be resolved in a secondary menu screen.

In a study of menu selection tasks comparing the mouse and the trackball, the accuracy data showed no significant difference between the two. The key finding shows that both mouse users and trackball users performed better with the trackball on the menu selection task. It should be noted that this was not the case for all tasks. However, the definition of

the menu selection task used by Sperling, Bied, Tullis, in "Are You a Better `Mouser` or `Trackballer`? A Comparison of Cursor--Positioning Performance", An Interactive/Poster Session at the CHI+GI'87 Graphics Interface and Human Factors in Computing Systems Conference, incorporated herein by reference, **which involved moving the cursor through a list of items and making a selection, is similar in nature to the selection tasks used in the present invention**.

Thus, if the user has only used the VCR to record, e.g., the NBC 11 o'clock news, i.e., record all days from 11:00 p.m. to 11:30 p.m. on NBC, in the past, the most likely current predicted choice would be the NBC 11 o'clock news. **If the interface were to present a number of choices**, having lower probability, then it would interpret the recording history to be "news" based on a database of broadcast information. Therefore, a prediction of lower probability would be ABC or CBS news at, e.g., 11:00 p.m., and the NBC news at, e.g., 5:00 p.m. **Thus, these three choices would be initially presented to the user**, along with a menu selection to reject these predicted choices. In this case, the user would select the "reject" selection, and would be presented with a next predicted desired menu choice. Since the user history, in this case, does not provide for another choice of high probability, the user would be prompted to explicitly choose the program sequence by day, time, channel, and duration. The user would then enter the starting time for recording according to the methods described above. The interface would then search its databases regarding the user and broadcast listings to present a most likely choice, as well as all available alternatives. In this case, the user history is of little help, and is not used to predict. In other cases, the system would use its intelligence to "fill in the blanks", which could, of course, be rejected by the user. The most likely choices would then be those programs that begin at the selected time. If the user had input the channel, instead of starting time, then **the presented choices would be the broadcast schedule of the channel**, e.g. Fox, for the selected day. **The user then selects one of the available choices, which would complete the programming sequence**. If no database of broadcasts is available, then the user must then explicitly define all parameters of the broadcast. When the programming is completed, the interface must then update its user database, prompt the user to set the VCR to record, by, e.g., inserting a blank or recordable tape.

A built-in calendar menu screen is employed so that the user cannot set the device with a program step that relies on a non-existent date. Technology that will help eliminate the human problem of setting the wrong (yet existing) date may also be employed. Such technology might include accessing an on-line or other type of **database containing media programming information, and prompting the user regarding the selected choice**. In situations where it is applicable, the interface should prompt the user as to how many characters the interface is expecting, such as when entering the year.

The present invention also allows encryption and decryption of material, much as the Videocipher series systems from General Instruments, and the fractal enciphering methods of EMC.sup.2 and Iterated Systems, Inc. The present invention, however, is not limited to broadcasts, and instead could implement a system for both broadcasts and prerecorded materials. In the case of copying from one tape to another, such a system

could not only provide the herein mentioned library functions of the present invention, it could also be used to aid in copy protection, serial copy management, and a pay-per-view royalty collection system. Such a system could be implemented by way of a telecommunication function incorporated in the device, shown as block 1808 of FIG. 18, or an electronic tag which records user activity relating to a tape or the like. A royalty fee, etc., could automatically be registered to the machine either by telecommunication or registry with the electronic tag, allowing new viewer options to be provided as compared with present VCR's. For example, an encrypted tape or other source material (so that special playback equipment need be used, and a usage registered), used with this device, could be decrypted by a decryption key available by telecommunication with a communication center, remote from the user, in a decryption unit, shown schematically as the decrypt unit 1806a of FIG. 18. During acquisition of the electronic key, a VCR device of an embodiment of the present invention would indicate its identity, and an account is charged a fee for such use. Such a system could also be used for controlled access software, for example for a computer, wherein a remote account is charged for use of the software. Such a system differs from the normal "key" or "dongle" because it requires on-line access for an encryption key, which may offer different levels of use. It also differs from a call-in registration, because of the automatic nature of the telecommunication. This presently described system differs from normal pay-per-view techniques because it allows, in certain instances, the user to schedule the viewing. Finally, with an encryption function implemented in the VCR, the device allows a user to create and distribute custom "software" or program material. In addition, the present controller could then act as the "telecommunication center" and authorize decryption of the material. The present invention is advantageous in this application because it provides an advanced user interface for creating a program (i.e. a sequence of instructions), and it **assists the user in selecting from the available programs**, without having presented the user with a detailed description of the programs, i.e., **the user may select the choice** based on characteristics rather than literal description. In the case of encrypted program source material, it is particularly advantageous if the characterization of the program occurs without charging the account of the user for such characterization, and only charging the account if the program is viewed by the user. The user may make a viewing decision based on the recommendation of the interface system, or may review the decision based on the title or description of the program.

Menu options are preferably displayed in logical order or in their expected frequencies. Research has shown that a menu-driven interface is best for applications involving new users and does not substantially hinder experienced users. **Menu selection is preferably used** for tasks which involve limited choices. They are most helpful for users with little or no training. Each menu should preferably **allow only one selection** at a time. Most of the information is preferably entered using a numeric keypad (entry method), rather than using up and down arrow keys (selection method). If there is more than one keystroke required, the user must then select an "OK" button to continue in the programming sequence. However, **if the selection method is used, all of the choices are displayed on the screen** at once. In addition, no leading zeros are required. The number of steps required to complete the task through a sequence of menus should be minimized. The choice of words used to convey information should not be specific computer terms,

but rather normal, everyday terms which are easy to understand. In addition, very few abbreviations should be used. All necessary information which the user needs should preferably be displayed at once. A user preferably should not have to rely on his memory or his previous experience, in order to find the correct choice, at least at the lower user levels. If all selections cannot be displayed at once, a hierarchical sequence is preferably used. A main menu should preferably provide a top level to which the user can always return and start over.

A Genius.TM. Mouse was used as the input device in the prototype of the interface of the present invention. With the mouse, **the user could view all of the choices at once on the display screen, and then make a selection from the items on the screen by moving the cursor and then pressing the left mouse button**.

In order to retrieve an entry, the user interacts with the same interface that is used for programming the recorder functions; however, the user selects different menu selections, which guide him to the available selections. This function, instead of focusing mainly on the particular user's history in order to predict a selection, would analyze the entire library, regardless of which user instituted the recording. Further, there would likely be a bias against performing identically the most recently executed function, and rather the predicted function would be an analogous function, based on a programmed or inferred user preference. This is because it is unlikely that a user will perform an identical action repeatedly, but a pattern may still be derived.

Therefore, the priority application supports the use of Hypercard, Hyperpad, Frontier, and other hypertext-type software, to receive a user selection of a media program choice from a list, or menu of media choices, thus fully supporting the scope of claim 178.

ART REJECTIONS

Claims 156 and 186 are rejected as being anticipated by Strubbe, US 5,223,924. The priority date of Strubbe is May 27, 1992, and claims 155/156, and 183/186 are fully supported by USSN 07/812,805, of which the present application is a CIP. (See, at least, Supplemental Declaration and Power of Attorney faxed 7/12/2004). Therefore, no further response is believed necessary to distinguish this reference.

Claims 182 and 183 are rejected as being anticipated by Robertson (1987). Paragraph 12 of Robertson makes clear that the system recommends books to a customer based on a sort of filter which receives an **explicit** indication of favorite **authors**, and then seeks to recommend works

by other authors which the user might like (using an unspecified algorithm). This differs from the presently claimed invention of claim 182 which requires a determination of a correspondence between **content-dependent characteristics**. It is respectfully submitted a correlation of favorite authors to recommended authors does not anticipate the presently claimed "content-dependent characteristics".

It is particularly noted that the present invention would be operable with respect to anonymous works, while the system described by Robertson would not. Likewise, the system according to the present invention would overcome the issues that arise in pseudonymous works with multiple actual authors using a common author identification, e.g., the 350 Nancy Drew Stories under the pen name Carolyn Keene. Therefore, the identity of the author of a work is clearly distinct from its content, and the basis for the rejection of claim 182 is traversed.

Claim 183 is believed distinguished because it requires receiving data describing a plurality of characteristics of available media. Robertson does not teach or suggest a system or method which is capable of resolving correlations of user preferences based on a plurality of characteristics, and merely discloses a single <u>characteristic</u> to be used, the favorite authors. It is noted that each work has but a single author (which might be multiple persons), and therefore represents a single characteristic, not a plurality of characteristics. Further, even assuming *arguendo* that the favorite authors (plural) are indeed a plurality of characteristics, this still does not meet the claim language, which requires "determining a relation between the available media and the media previously selected by the user, based on a respective plurality characteristics of the available media and media previously selected by the user." The favorite authors, under this interpretation, represent a plurality of characteristics of the <u>media previously selected by the user</u>, and not a plurality of characteristics of the <u>available media</u>, as required by the claim.

It is therefore respectfully submitted that claim 183 is patentable in view of Robertson.

Claims 185 and 189 are rejected under 35 U.S.C. § 103 as being obvious over Robertson in view of Hey (US 4,996,462), and are likewise distinguished. Claim 188 is rejected under 35 U.S.C. § 103 as being obvious over Robertson in view of Bolster, and is likewise distinguished. Claim

190 and 191 are rejected under 35 U.S.C. § 103 as being obvious in view of Robertson, and are likewise distinguished.

Claims 155, 162, 174-177 and 179 are rejected under 35 U.S.C. § 103 as being obvious over Robertson in view of the Washington Post Article (1988). Claims 157, 161 and 163-166 are rejected in further view of Hey (US 4,996,462). Claims 158-159 are rejected further in view of Hey and Bolster, "Reading Made Fun: Book Whiz". Claims 178 and 180-181 (and 160?) are rejected further in view of Bolster, "Reading Made Fun: Book Whiz". Claim 160 is inferentially rejected as being obvious over Robertson in view of Bolster.

It is believed that claims 155 and 162 are distinguished by the language "wherein said data representing characteristics are not input by the user". In particular, the Examiner alleges that the favorite author's names are not input by the user, but are rather selected from preexisting inputs. However, the claim language is not limited to an input of the author's name, but rather the word "representing" also distinguishes the interpretation set forth by the Examiner. Thus, the user in Robertson touches the names of favorite author as an input, which clearly "represents" the alleged characteristics. Thus, it is respectfully submitted that claims 155 and 162 distinguish Robertson, and the secondary reference does not remedy this deficiency.

Claim 177 is correspondingly distinguished based on the language: "wherein the data representing characteristics of media previously selected by the respective user are not input by that user."

Claim 179 is distinguished on a different basis, since the "parameter" is not input by the user, and thus the Examiner's interpretation appears valid. In this case, however, the claim requires "determining a degree of correspondence of prior selections by the respective user and members of the set of available media programs based on at least the parameters relating to prior selections by the respective user and the associated parameters of members of the set of available media programs", which is not taught or suggested by Robertson. That is, the Examiner alleges that the "smart clerk" determines a "degree of correspondence"; however, the reference includes not such teaching, express or implied. A "**degree** of correspondence" requires a gradation, meaning a

multivalued parameter, which is not present in Roberson. For example, the "smart clerk" could simply have a set of static linkages, a condition insinuated by the description which reads: "'smart clerk', **searches** for authors the customer might also like." Therefore, it is respectfully submitted that the combination of references does not render claim 179 obvious, and that reconsideration of the rejection is respectfully solicited.

The various dependent claims are believed patentable for at least corresponding reasons asserted for allowability of the respective independent claims.

Claims 183, 192 and 193 are rejected under 35 U.S.C. § 103 as being obvious over Wachob (US 5,155,591).

Claim 183 requires: "determining a relation between the available media and the media previously selected by the user, based on a respective plurality characteristics of the available media and media previously selected by the user". On the other hand, Wachob discloses a method and apparatus for providing **demographically** targeted television commercials. The demographic characteristics of a user are clearly a distinct concept from the characteristics of media previously selected by that user, which need not be determined, and are not determined, in the system disclosed by Wachob. That is, there is no particular direct logical relation between the characteristics of media previously selected by the user, and the available media (i.e., the commercial), since the data is filtered for demographic characteristics only. Claims 192 and 193 are likewise distinguished on corresponding bases.

The sole disclosure of Wachob relating to determining the media presently being viewed by user (which, incidentally, may differ from the media actually selected by the user, since programs change over time) is: "Alternate methods of identifying viewer demographic types include a passive approach, relying upon image recognition technology to determine what viewer or viewers are watching television at any given time." In view of the phraseology and technology available, it is believed that this disclosure best describes a pattern matching ("recognition") system in which a frame of video is matched against a library of frames. See, US 4,230,990. In contrast, the present invention determines not simply an identity of media previously selected by

the user, but its <u>characteristics</u>. Wachob is devoid of any teaching or suggestion relating to determining characteristics of media, the above quote notwithstanding.

For completeness, applicant's undersigned attorney has reviewed Wachob, whose disclosure is limited to determining the demographic characteristics of a user as follows:

> Viewer demographic types can be determined in a variety of ways. In one approach, a user demographic key on a handheld remote control is actuated by the viewer before television channel selection is made. This demographic type is then stored in the memory of a cable television converter or the like. The converter will thereby know what demographic type is viewing a television program.
>
> Alternate methods of determining individual viewer demographic types include household survey or diary information, known address/neighborhood locations or known ethnic locations. All of these approaches allow for demographic information to be programmed into a converter on an individual basis during installation of a cable television converter or, by known techniques from a cable system headend that transmits data to an addressable converter.
>
> A remote control 120 for use with converter 10 is illustrated in FIG. 2. Data are transmitted from the front end 122 of remote control 120 using an infrared or equivalent remote data path. A plurality of conventional function buttons 132 and channel selection buttons 134 are provided. In accordance with the present invention, a plurality of switches 124, 126, 128, 130 is provided to enable a user to input demographic data to converter 10. For example, switches 124 and 126 can be provided to indicate that the viewer is an adult male or female, respectively. Switches 128 and 130 can be provided to indicate that the viewer is a male or female child, respectively. Other demographic information can alternately be provided via switches 124-130, or by the provision of additional demographic switches on remote control 120. Equivalent switches can also be provided on the converter itself, as part of keypad 42. In an alternate embodiment, a user code is entered on the numeric keys of the remote control or converter to identify the demographic type of the viewer before any commands are executed. Use of a user code would expand the number of demographic types allowable, but may require additional keys to be actuated to initiate a converter response.
>
> In operation, a viewer is required to press a demographic key on the remote control 120 (or on keypad 42) before any other key is depressed to select a channel or other converter function. The demographic data (and any other relevant data, such as data indicative of the converter function selected) are then stored in RAM 36 so that the converter knows what demographic type is watching the television associated with the converter at any given instant. This implementation provides a dynamic system where the viewer demographics can change at any time. In addition, multiple viewer data and/or demographic types can be entered and stored in the converter. A "delete" button can be

provided to tell the system that a particular demographic type has left the viewing area. Prioritization of multiple viewers for use in selecting appropriate commercials is handled as described below in connection with FIG. 4.

Alternate methods of identifying viewer demographic types include a passive approach, relying upon image recognition technology to determine what viewer or viewers are watching television at any given time. Demographic types can also be identified using household survey or diary information, known address/neighborhood locations or known ethnic locations. Information determined by such techniques is transferred into RAM 36 of converter 10 on an individual basis by a technician installing the converter, or via a communication from the cable system headend which addresses converter 10, via FM data receiver 26, to download the demographic data. This approach allows the headend to update and modify changes in household demographics for particular subscribers.

Claims 168 and 170-173 are rejected under 35 U.S.C. § 103 as being obvious over Robertson in view of Hey (US 4,996,462) and Wachob (US 5,155,591). Claim 168 provides "a processor for searching media items available for selection and for presenting a recommendation of at least one available media item to the user, based on a correspondence of said selection [of a media item] and characteristics of available media items input independently of the user". Robertson does not receive a user selection of a media item, but rather an indication of favorite authors, and therefore does not meet the claim requirements.

Wachob does not correlate a media selection and a commercial, but rather uses a determined user demographic to select a commercial for viewing. As discussed above, there is no direct logical relation between media selected by a user and the demographic characteristics of that user, and therefore the system does not rely on a correspondence of the selection and characteristics of available media.

Hey relates to a collaborative filter (social filter) system in which user preference correlations are drawn agnostic to the characteristics of the media. That is, a user inputs a feedback scalar representing a degree of like of previously consumed media. Based on a set of scores, the user is grouped with other users with similar scalars for the same consumed media. Once grouped with those of presumably similar likes, the user may then be presented with new media for which other members of the group display high scalar ratings. However, the result does not require any correspondence between the previously consumed media and the recommended media.

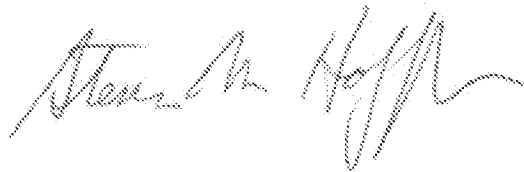Claims 170-173 are likewise distinguished on at least the same basis as claim 168.

Claim 169 is rejected under 35 U.S.C. § 103 as being obvious over Robertson in view of Hey (US 4,996,462) and Strubbe (US 5,223,924), and Wachob (US 5,155,591). These references are distinguished and/or overcome as set forth above, and claim 169 is believed allowable at least the same basis as claim 168.

Claim 171 is rejected under 35 U.S.C. § 103 as being obvious over Robertson in view of Hey (US 4,996,462), and Wachob (US 5,155,591), and Bolster. These references are distinguished as set forth above, and claim 171 is believed allowable at least the same basis as claim 168.

CONCLUSION

It is respectfully submitted that the application is in form for allowance. If any issues remain outstanding, the Examiner is respectfully invited to call the undersigned for an Interview.

Respectfully submitted,

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